

AFFIDAVIT OF MICHELLE RATCHFORD

STATE OF TEXAS

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COUNTY OF BEXAR

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DRAFT

I, Michelle Ratchford, do hereby aver and state that:

1. I am over the age of 18;
2. I have a M.S. degree and a B.S. degree in Chemistry from The University of Texas at San Antonio;
3. I have been employed by Southwest Research Institute ("SRI") for 16 years. SRI is an independent, nonprofit, applied engineering and physical sciences research and development organization. For the past thirteen years, I have been in the Fuel Conformance Section of the Petroleum Products Research Department. For the past three years, I have been Manager of Fuel Conformance. Fuel Conformance is responsible for providing analytical and physical testing and the evaluation and qualification of fuels procured by contractors in the field for our clients which include major oil corporations.
4. Clients of SRI requested Fuels Conformance to characterize their gasoline blends in June, 1992. Our assignment included the testing of certain physical and chemical properties of such gasoline fuels in selected areas of the United States. The report of our findings is set forth in *Exhibit A* and *Exhibit B*. Copies of *Exhibit A* and *Exhibit B* are attached. I have reviewed *Exhibit A* and *Exhibit B* and am familiar with the entire report from which these Exhibits are excerpted.
5. The first datapoint in *Exhibit B* and the second datapoint of *Exhibit A* report a gasoline fuel containing 9.2 volume percent ethanol and exhibiting a Reid Vapor Pressure (RVP) of 6.7. This datapoint is an outlier and one versed in the field of gasoline fuels would readily conclude that this datapoint is an outlier for the June, 1992 time period. An outlier is a piece of data that appears to not belong within the range of data being reported. The cause of the outlier cannot now be determined but could be attributable to instrumentation error, keypunch error, transcription error or sample contamination. My conclusion that the datapoint is an outlier is supported by the fact that no other sample tested in the study having an ethanol content of 8.3%

or greater had a RVP of less than 8.9. As such, the RVP for this gasoline fuel is an outlier and outside of the range of data that would have been anticipated for the June, 1992 time period.

6. FURTHER AFFIANT sayeth not.

DATED: June _____, 2001.

Michelle Ratchford

STATE OF TEXAS §
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COUNTY OF BEXAR §

BEFORE ME, the undersigned authority, on this day personally appeared Michelle Ratchford, known to me to be the person whose name is subscribed to the foregoing instrument; and acknowledged to me under oath that she executed the foregoing document.

SUBSCRIBED AND SWORN TO BEFORE ME on this the ____ day of June, 2001.

Printed Name:

NOTARY PUBLIC IN AND FOR
THE STATE OF TEXAS

Exhibit A

GASOLINE DATA
ASTM D-86 DISTILLATION

1992

JUNE

GR	MON	TUE	WED	THU	FRI	SAT	SUN	ASTM D-86	POST	GRAV	104	504	904	RVF	% O2	HTSE	HTSE	DIPE	TIME	ETOR
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NU	95.3	81.6	89.6	89.0	57.1	122	176	343	9.8											
	94.7	84.2	89.5	90.0	58.5	122	178	332	6.7											
	94.8	84.3	89.5	89.0	58.6	118	178	330	9.6											
	95.0	84.9	90.0	89.0	58.9	121	176	329	9.6											
NU	95.0	84.2	89.7	89.3	58.3	121	177	334	8.9											
	97.1	86.8	92.0	92.0	61.4	138	218	336	7.2											
	95.6	85.8	90.7	91.0	58.4	132	210	327	8.6											
	95.6	85.9	90.9	91.0	57.8	130	218	321	8.5											
	98.4	87.3	92.9	93.5	58.3	126	206	312	8.8											
	96.2	86.1	91.2	91.0	55.1	127	228	325	8.2											
	97.4	85.9	91.7	91.0	56.1	122	202	323	10.5											
PU	96.7	86.3	91.6	91.6	58.2	129	219	324	8.6											
	94.8	84.6	89.7	90.0	58.3	122	184	335	9.7											
	94.5	84.5	89.5	89.0	58.2	124	189	338	9.7											
RL	94.6	84.5	89.6	89.5	58.2	123	187	337	9.7											
	92.3	82.1	87.2	87.0	57.8	122	197	344	8.6											
	91.4	81.7	87.1	87.0	59.4	124	207	343	8.5											
	91.9	81.1	87.5	87.0	59.4	125	204	335	8.7											
	91.4	82.7	87.1	87.0	59.3	129	210	344	8.4											
	92.0	83.4	87.7	87.0	60.3	125	202	332	8.7											
	91.4	82.7	87.1	87.0	59.3	130	212	338	8.4											
RU	91.7	82.8	87.3	87.0	59.2	126	205	339	8.5											

EXHIBIT A

Gasoline Data from a Third Party, June 1992

	RVP	ETOH	CITY_NAME	COMPANY_NAME	GRADE	T10	T50	T90
	PSI	VOL%				(F)	(F)	(F)
REDACTED	6.7	9.2	REDACTED	REDACTED	MU	122	178	332
REDACTED	6.9	10.2	REDACTED	REDACTED	PU	139	217	309
REDACTED	6.9	9.9	REDACTED	REDACTED	MU	136	215	325
REDACTED	6.9	9.9	REDACTED	REDACTED	PU	138	219	314
REDACTED	7	5.7	REDACTED	REDACTED	MU	131	195	306
REDACTED	7	5.7	REDACTED	REDACTED	PU	136	201	305
REDACTED	7	5.8	REDACTED	REDACTED	MU	130	200	305
REDACTED	7	5.7	REDACTED	REDACTED	PU	132	198	300
REDACTED	7	5.8	REDACTED	REDACTED	RU	126	198	303
REDACTED	7	9.6	REDACTED	REDACTED	PU	139	223	304
REDACTED	7	10	REDACTED	REDACTED	MU	137	217	327
REDACTED	7	10.1	REDACTED	REDACTED	RU	134	208	338
REDACTED	7.1	9.8	REDACTED	REDACTED	MU	123	178	340
REDACTED	7.1	8.4	REDACTED	REDACTED	MU	138	197	308
REDACTED	7.1	8.7	REDACTED	REDACTED	PU	138	207	303
REDACTED	7.1	8.6	REDACTED	REDACTED	RU	140	194	311
REDACTED	7.1	6.7	REDACTED	REDACTED	RU	134	197	315
REDACTED	7.1	10.1	REDACTED	REDACTED	RU	138	218	340
REDACTED	7.2	9.6	REDACTED	REDACTED	RU	132	187	358
REDACTED	7.2	10.1	REDACTED	REDACTED	MU	120	161	335
REDACTED	7.2	7.7	REDACTED	REDACTED	PU	129	206	361
REDACTED	7.2	10.1	REDACTED	REDACTED	MU	132	203	358
REDACTED	7.2	10.1	REDACTED	REDACTED	RU	135	214	344
REDACTED	7.3	7.7	REDACTED	REDACTED	PU	141	221	325
REDACTED	7.3	7.4	REDACTED	REDACTED	PU	139	214	323
REDACTED	7.3	7.2	REDACTED	REDACTED	PU	138	231	345
REDACTED	7.3	7.1	REDACTED	REDACTED	RU	134	196	348
REDACTED	7.4	9	REDACTED	REDACTED	PU	140	239	328
REDACTED	7.4	9.3	REDACTED	REDACTED	MU	136	212	325
REDACTED	7.5	7.2	REDACTED	REDACTED	PU	133	218	340
REDACTED	7.5	10.5	REDACTED	REDACTED	RL	128	175	331
REDACTED	7.5	7.5	REDACTED	REDACTED	MU	130	207	349
REDACTED	7.5	8	REDACTED	REDACTED	PU	136	216	317
REDACTED	7.5	10	REDACTED	REDACTED	MU	133	203	333
REDACTED	7.5	10.1	REDACTED	REDACTED	PU	140	229	321
REDACTED	7.5	10	REDACTED	REDACTED	PU	140	217	
REDACTED	7.6	8.87	REDACTED	REDACTED	RU	121	200	305
REDACTED	7.6	8.4	REDACTED	REDACTED	PU	136	215	330
REDACTED	7.6	7.5	REDACTED	REDACTED	PU	138	235	338
REDACTED	7.6	8.4	REDACTED	REDACTED	PU	137	234	334
REDACTED	7.6	10.3	REDACTED	REDACTED	MU	130	190	321
REDACTED	7.6	11.6	REDACTED	REDACTED	PU	137	217	336
REDACTED	7.6	11	REDACTED	REDACTED	RU	131	187	331
REDACTED	7.6	10.1	REDACTED	REDACTED	RU	130	197	340
REDACTED	7.6	10.2	REDACTED	REDACTED	RU	133	198	350
REDACTED	7.6	10.8	REDACTED	REDACTED	RU	134	199	320
REDACTED	7.6	10.3	REDACTED	REDACTED	PU	137	214	331
REDACTED	7.6	10.5	REDACTED	REDACTED	PU	139	219	338
REDACTED	7.6	10.5	REDACTED	REDACTED	PU	134	211	327
REDACTED	7.6	10.5	REDACTED	REDACTED	PU	139	212	304

Exhibit B

tion utilizing Anderson in that capacity is unnecessary.

The decision of the board is affirmed.
Affirmed.

ALMOND, J., took no part in the consideration or decision of this case.



28 CCPA
Application of Harry Louis YALE.
Patent Appeal No. 8368.

United States Court of Customs
and Patent Appeals.
Dec. 10, 1970.

Proceeding on appeal from decision of the Patent Office Board of Appeals, Serial No. 554,871 affirming rejection of claims 1-10 of application entitled "Inhalation Anesthetic." The Court of Customs and Patent Appeals, Almond, J., held that where listing of CF_3 , CF_2 , CHClBr in article pertaining to anesthetics was an error obvious to one of ordinary skill in the art, that reference did not provide a valid disclosure of the compound, and thus it was improper to reject claims 1-10 of application relating to chemical compound which had formula CF_3 , CF_2 , CHClBr and which was useful as an inhalation anesthetic as being unpatentable.

Reversed.

Patents \Rightarrow 66(1,12)

Where listing of CF_3 , CF_2 , CHClBr in article pertaining to anesthetics was an error obvious to one of ordinary skill in the art, that reference did not provide a valid disclosure of the compound, and

thus it was improper to reject claims 1-10 of application relating to chemical compound which had formula CF_3 , CF_2 , CHClBr and which was useful as an inhalation anesthetic as being unpatentable over prior art. 35 U.S.C.A. § 103.

Lawrence S. Levinson, New Brunswick, N. J., attorney of record, for appellant; Robert Alpher, New York City, Theodore J. Criares and Merle J. Smith, New Brunswick, N. J., of counsel.

S. Wm. Cochran, Washington, D. C., for the Commissioner of Patents; Jack E. Armore, Washington, D. C., of counsel.

Before RICH, ALMOND, BALDWIN and LANE, Judges, and RE, Judge, United States Customs Court, sitting by designation.

ALMOND, Judge.

This is an appeal from the decision of the Patent Office Board of Appeals, adhered to on reconsideration, affirming the rejection of claims 1-10 of appellant's application entitled "Inhalation Anesthetic."¹ No claims have been allowed.

The invention relates to a chemical compound, 3-bromo-3-chloro-1,1,1,2,2-pentafluoropropane, which has the formula CF_3 , CF_2 , CHClBr . Azeotropic mixtures of the compound with diethyl ether, as well as mixtures of the compound with a preservative such as thymol, are disclosed. The compound or its azeotrope, with or without a preservative added, is useful as an inhalation anesthetic and may be administered with a source of oxygen. Claim 1 recites the compound; claim 2 is for the compound in pure form; claim 3 covers an azeotropic mixture; claims 4-5 cover a mixture of the compound with a preservative; and claims 6-10 are drawn to the method of inducing anesthesia with the compound.

¹ Serial No. 554,871 filed June 2, 1966 as a continuation-in-part of serial No. 885,173 filed May 5, 1964.

APPLICATION OF YALE

Cite as 434 F.2d 666 (1970)

667

The references relied upon were:

Suckling et al. (Suckling)	3,097,133	July 9, 1963
Murray et al. (Murray)	3,177,260	April 6, 1965
Clements et al. (Clements), <i>Proc. Nat'l Acad. of Sci.</i> , Vol. 48, 1962, pages 1008-1014.		
<i>Chemical Abstracts</i> , Vol. 58, April 1963, 7264(h)-7265(a).		

The Clements article reports the results of research conducted to determine how strongly inert anesthetic gases interact with surface films on water. Fig. 3 shows a graph of $\log P_A$ vs. $\log P_i$ for agents for anesthesia in mice. $CF_3CF_2CHClBr$ is one of the nine compounds plotted on the graph. This compound is not mentioned anywhere else in the article and is not plotted on any of the other graphs.

Suckling discloses inhalant anesthetic compositions consisting of fluorinated hydrocarbons, but not $CF_3CF_2CHClBr$. The anesthetic may be administered with a source of oxygen; it may be mixed with a stabilizer such as thymol, as well as with another inhalant anesthetic such as ether.

Murray shows that other halogenated hydrocarbons have been made by the reaction of a halogen with a less halogenated starting material, the general method used for preparing appellant's compound; and the Chemical Abstract reference shows that the starting materials used in preparing appellant's compound are known.

All the claims were rejected under 35 U.S.C. § 103 as unpatentable over Clements in view of Suckling. The examiner relied upon the disclosure of the formula $CF_3CF_2CHClBr$ in Fig. 3 of the Clements article pertaining to anesthetics; and with respect to the admixtures of claims 3-5 and the administration techniques of claims 6-10, he referred to the Suckling patent. The Board of Appeals affirmed that rejection.

Appellant apparently does not take issue with the obviousness of the combination of references if Clements is found to be a valid reference with regard to the disclosure of $CF_3CF_2CHClBr$. It is

appellant's main contention that the listing of $CF_3CF_2CHClBr$ in Clements was a typographical error. Appellant argues that it would be obvious to one of ordinary skill in the art that the reference to $CF_3CF_2CHClBr$ in Clements is an error since (1) only known compounds were discussed in the article; (2) all the compounds tested were plotted as to $\log P_i$ in Fig. 1; (3) $CF_3CF_2CHClBr$ in Fig. 3 is the only compound listed in any figure which is not also listed in Fig. 1, and (4) the $\log P_i$ in Fig. 3 at which $CF_3CF_2CHClBr$ is plotted is the $\log P_i$ for $CF_3CHClBr$ in Fig. 1 and the two compounds are not likely to have the same $\log P_i$. In addition, appellant submitted two letters, one of which was from a chemist named Dr. Hofmann to Kenneth M. Wilson, the co-author of the Clements article, inquiring whether the listing of $CF_3CF_2CHClBr$ was a typographical error. The response from Wilson stated:

Figure 3 of the paper by Dr. J. A. Clements and myself is, of course, an error as you suppose and $CF_3CF_2CHClBr$ should read $CF_3CHClBr$.

It is appellant's position that since the listing of $CF_3CF_2CHClBr$ in Clements is clearly an error, that reference does not provide a valid disclosure of the compound.

The board considered appellant's arguments in this regard but found them unpersuasive. It stated that there was no showing that $CF_3CHClBr$ and $CF_3CF_2CHClBr$ could not have the same $\log P_i$ value, nor did it find any indication in the article that all of the compounds listed in Fig. 3 were meant to correspond to the compounds listed in Fig. 1. In regard to the Hofmann-Wilson letters, the board refused to accept them as evidence on the ground that more authentication is required than the mere filing of copies of letters. It was then stated by the board that even if the asserted error were properly established, such error would not serve to avoid the rejection under the particular circumstances of the instant case.

Appellant responded to the board's decision with a request for reconsideration and an affidavit by Dr. Hofmann which, among other things, identified the previously filed correspondence. The board accepted the affidavit only to the extent that it identified such correspondence, but adhered to its previous decision on the ground that, even assuming an error to exist, the reference is still good since in a printed publication under 35 U.S.C. § 102(b) there is no need for actual possession of the described compound by the author. Actually, all the claims were rejected under 35 U.S.C. § 103, and thus the reference was viewed as to what it reasonably taught to those of ordinary skill in the art. It was the board's position that the error in Clements is not apparent on the face of the document and one of ordinary skill in the art, not knowing of the error, would be taught that $\text{CF}_3\text{CF}_2\text{CHClBr}$ is an anesthetic. In addition, it was felt that the Muray and Chemical Abstract references indicate that the chemist of ordinary skill would know from the available art how to make the compound. No claims were rejected over the Muray and Chemical Abstract references alone, but rather those references were used with Clements in accordance with a doctrine which arose in *In re Von Bramer*, 127 F.2d 149, 29 CCPA 1018 (1942).

The *Von Bramer* doctrine has been discussed by us at length on several occasions, one being *In re Brown*, 329 F.2d 1006, 51 CCPA 1254 (1964), which is relied upon by appellant and which states (at 1010 of 329 F.2d, at 1259 of 51 CCPA):

To the extent that anyone may draw an inference from the *Von Bramer* case that the mere printed conception or the mere printed contemplation which constitutes the designation of a "compound" is sufficient to show that such a compound is old, regardless of whether the compound is involved in a 35 U.S.C. § 102 or 35 U.S.C. § 103 rejection, we totally disagree. [Footnotes omitted.] * * *

We think, rather, that the true test of any prior art relied on to show or suggest that a chemical compound is old, is whether the prior art is such as to place the disclosed "compound" in the possession of the public. [Citations omitted.]

Applying this test, the question here is not whether the listing of $\text{CF}_3\text{CF}_2\text{CHClBr}$ in Clements, if it were an error, evidenced a conception of the compound, for surely it did not. Rather, the question is whether the listing of $\text{CF}_3\text{CF}_2\text{CHClBr}$ describes to one of ordinary skill in the art the compound and whether one of ordinary skill in the art would know how to make the compound so that the mere listing of the compound places it in the possession of the public.

The solicitor cites *In re Land*, 324 F.2d 312, 51 CCPA 781 (1963), and *In re Pin*, 217 F.2d 956, 42 CCPA 746 (1954), as controlling in this case. However, those decisions, like *In re Von Bramer*, supra, merely stand for the proposition that the disclosed suggestion, whether or not workable or even intended at the time disclosed, made the invention obvious to one of ordinary skill in the art. In other words, the disclosed suggestion put one of ordinary skill in the art in possession of all the aspects of the invention since he would know how to implement the invention from the mere suggestion.

The Patent Office believes this to be one of those situations since Muray and the Chemical Abstract references indicate that the chemist of ordinary skill in the art would know how to make $\text{CF}_3\text{CF}_2\text{CHClBr}$. We find it unnecessary in the *Von Bramer*-type analysis to determine whether one of ordinary skill in the art would know how to make the compound since we do not believe the ordinary chemist would even consider making the compound.

It is our opinion that not only is the listing of $\text{CF}_3\text{CF}_2\text{CHClBr}$ in Clements a typographical error but also this fact would be apparent to one of ordinary skill in the art when reading the Clements article. Since it is an obvious error,

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APPLICATION OF GARDNER

Cite as 434 F.2d 689 (1970)

669

it cannot be said that one of ordinary skill in the art would do anything more than mentally disregard CF_3 , CF_2 CHClBr as a misprint or mentally substitute CF_3 CHClBr in its place. Certainly he would not be led by the typographical error to use the erroneous compound as an anesthetic even if as a chemist of ordinary skill in the art he would know how to prepare the compound. He simply would not get so far in the thought process as to determine if he knew how to make CF_3 , CF_2 CHClBr , as it would have long since been discarded by him as an obvious typographical error.

Appellant has gone through a detailed review of the Clements article to point out the inconsistencies which make it apparent that the listing of CF_3 , CF_2 CHClBr is an error. Any number of these individually or cumulatively would, we believe, alert one of ordinary skill in the art to the existence of the typographical error. Suffice it to say that the one we immediately noted was the inconsistency between Figs. 1 and 3 of Clements. The anesthetic gases tested by Clements are not mentioned in the written discussion; rather, they all are only listed in Table 1 or plotted on the graphs of Figs. 1-5. Only Fig. 1 plots all the compounds except, of course, CF_3 , CF_2 CHClBr . Except for CF_3 , CF_2 CHClBr , no compound not listed in Fig. 1 is plotted elsewhere, although each graph has a different number of compounds plotted on it. A comparison of Fig. 3 and Fig. 1 shows that eight out of the nine compounds in Fig. 3 (except CF_3 , CF_2 CHClBr) appear in Fig. 1. All eight have the identical Log P_1 in Fig. 3 that was listed for them in Fig. 1. The only exception to this is CF_3 , CF_2 CHClBr which was not listed in Fig. 1 and which has the Log P_1 which was assigned in Fig. 1 to CF_3 CHClBr . We have no doubt that the chemist of ordinary skill in the art would readily recognize that CF_3 , CF_2 CHClBr does not belong in Fig. 3 and must be an error.

Our conclusion as to the obviousness of the error in Clements is supported by the correspondence between Dr. Hof-

mann and the co-author of the Clements article, Kenneth Wilson. No question has been raised concerning the admissibility of the correspondence since the board considered the correspondence and explicitly accepted the affidavit of Dr. Hofmann to the extent that it identified the correspondence. However, the board did question the probative weight of this evidence because it had not been sworn to. In our opinion, while this may be said to detract to some extent from the weight of the evidence, the belief of Dr. Hofmann and Mr. Wilson, as indicated in the correspondence, that the listing of CF_3 , CF_2 CHClBr was an obvious typographical error and the inconsistencies in the Clements article itself, as pointed out above, make it clear that the error in Clements would be apparent to one of ordinary skill in the art.

Since the listing of CF_3 , CF_2 CHClBr in Clements is an error obvious to one of ordinary skill in the art, it cannot be said to describe or suggest that compound to those in the art. The public is not put in possession of the compound; thus, it would not be obvious to use it as an inhalant anesthetic as in Suckling or to mix it with the various other compounds which are mixed with the fluorinated hydrocarbons of Suckling.

Therefore, the decision of the board is reversed.

Reversed.



38 CCPA

Application of Conrad O. GARDNER.
Patent Appeal No. 8889.

United States Court of Customs
and Patent Appeals.
Dec. 10, 1970.

Proceeding in matter of application for patent. The Board of Appeals of United States Patent Office, Serial No. 589,636, affirmed rejection of claims 11,

INSTRUCTIONS: All material in this supplement is keyed to **SECTIONS** and **SUBSECTIONS** of the main volume. References to footnotes already in the volume are preceded by an "N." New footnotes do not have an "N."

CHISUM ON PATENTS

**A TREATISE ON THE LAW OF
PATENTABILITY, VALIDITY, AND
INFRINGEMENT**

**JULY 2000
CUMULATIVE SUPPLEMENT**

VOLUME 3

Donald S. Chisum
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Santa Clara University
Santa Clara, California

2000

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§ 7.04(1)(c)

2000 CUMULATIVE SUPPLEMENT

47

understanding of the law and are believed to be fully consistent with binding precedent of the Supreme Court, the Federal Circuit, and the Federal Circuit's predecessor courts.

These guidelines do not constitute substantive rulemaking and hence do not have the force and effect of law. They are designed to assist Office personnel in analyzing claimed subject matter for compliance with substantive law. Rejections will be based upon the substantive law, and it is these rejections which are appealable. Consequently, any failure by Office personnel to follow the guidelines is neither appealable nor petitionable.

These guidelines are intended to form part of the normal examination process. Thus, where Office personnel establish a prima facie case of lack of written description for a claim, a thorough review of the prior art and examination on the merits for compliance with the other statutory requirements, including those of 35 U.S.C. 101, 102, 103, and 112, is to be conducted prior to completing an Office action which includes a rejection for lack of written description.

Office personnel are to rely on these guidelines in the event of any inconsistent treatment of issues involving the written description requirement between these guidelines and any earlier guidance provided from the Office. Although these guidelines address examples principally drawn from the biotechnological arts, they are intended to be equally applicable to all fields of invention.

I. General Principles Governing Compliance with the 'Written Description' Requirement for Applications

The first paragraph of 35 U.S.C. 112 requires that the 'specification shall contain a written description of the invention * * *'. This requirement is separate and distinct from the enablement requirement.⁴ This written description requirement has several policy objectives. '[T]he "essential goal" of the description of the invention requirement is to clearly convey the information that an applicant has invented the subject matter which is claimed.'⁵ Another objective is to put the public in possession of what the applicant claims as the invention. The written description requirement prevents an applicant from claiming subject matter that was not described in the specification as filed, and the proscription against the introduction of new matter in a patent application⁶ serves to prevent an applicant from adding information that goes beyond the subject matter originally filed.

To satisfy the written description requirement, a patent specification must describe the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention.⁷ This requirement of the Patent Act promotes the progress of the useful arts by ensuring that patentees adequately describe their inventions in their patent specifications for the benefit of the public in exchange for the right to exclude others from practicing the invention for the duration of the patent's term.⁸

II. Evaluate Whether The Application Complies With the 'Written Description' Requirement

The inquiry into whether the description requirement is met must be determined on a case-by-case basis and is a question of fact.⁹ The examiner has the initial burden of presenting evidence or reasons why a person skilled in the art would not recognize in an applicant's disclosure a description of the invention defined by the claims.¹⁰ Office personnel should adhere to the following procedures when reviewing patent applications for compliance with the written description requirement of 35 U.S.C. 112, 1.

A. Review the Entire Application To Determine What Applicant has Invented, the Field of the Invention and the Level of Predictability in the Art

Prior to determining whether the claims satisfy the written description requirement, Office personnel should review the entire specification, including the specific embodiments, figures,

(Matthew Bender & Co., Inc.)

(Rev. 74-V.3 Pub. 525)

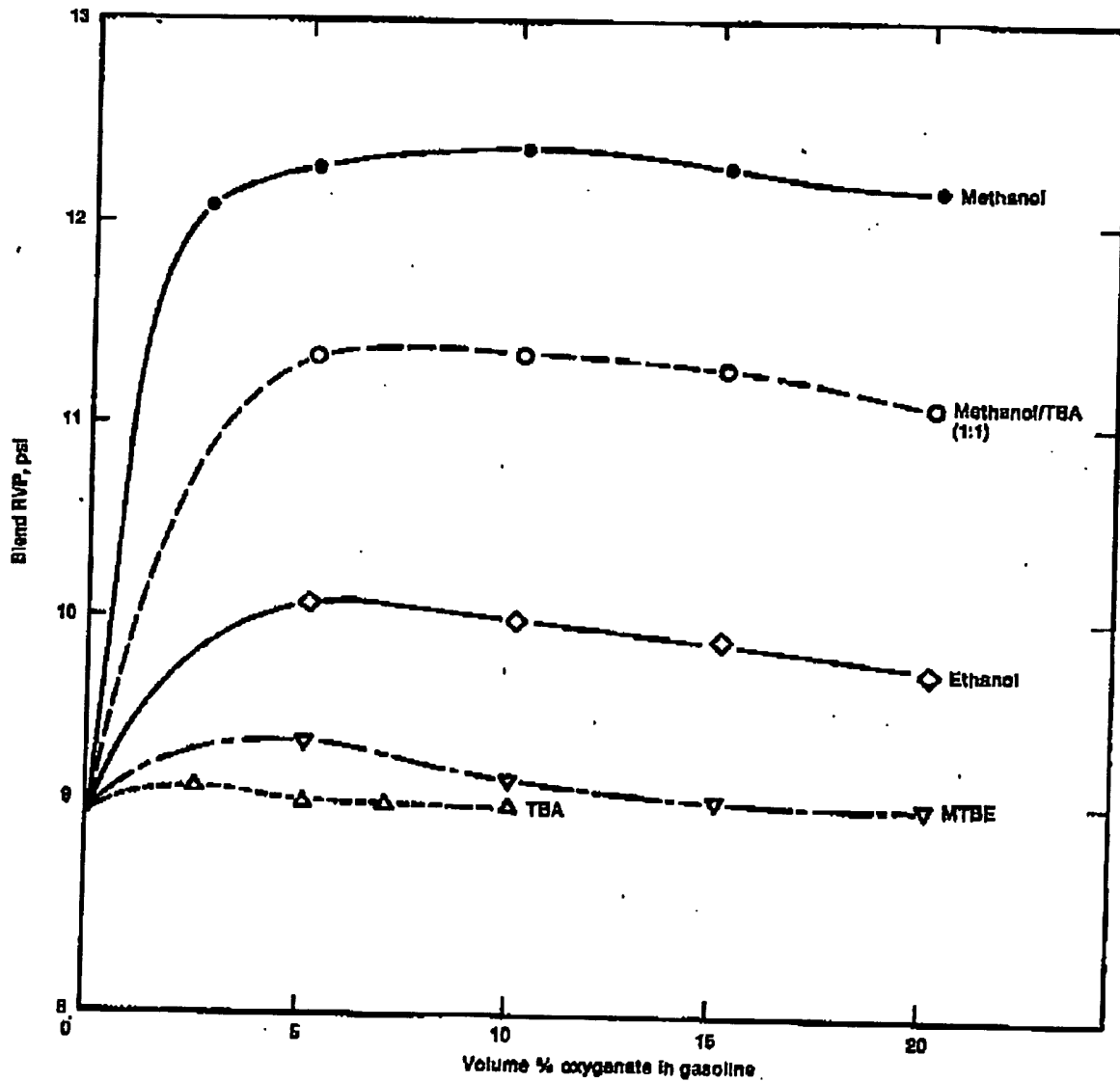
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And

ALCOHOLS AND ETHERS

12

API PUBLICATION 4261



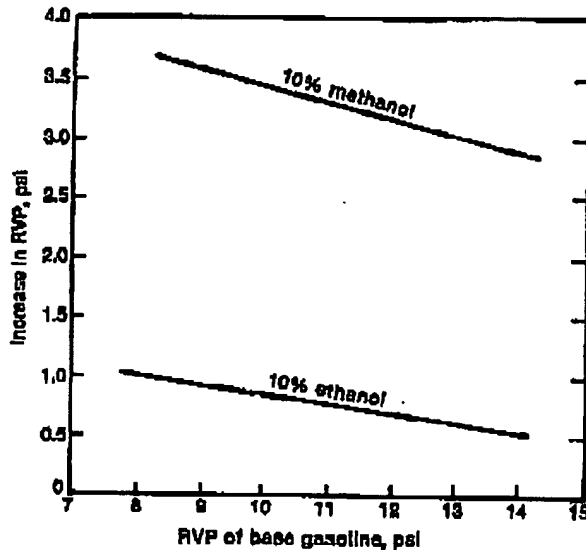
Notes:

1. Base gasoline -- Indolene HO III.
2. Source: Reference 32.

Figure 9--Effect of Oxygenate Concentration on Blend Vapor Pressure

ALCOHOLS AND ETHERS

13



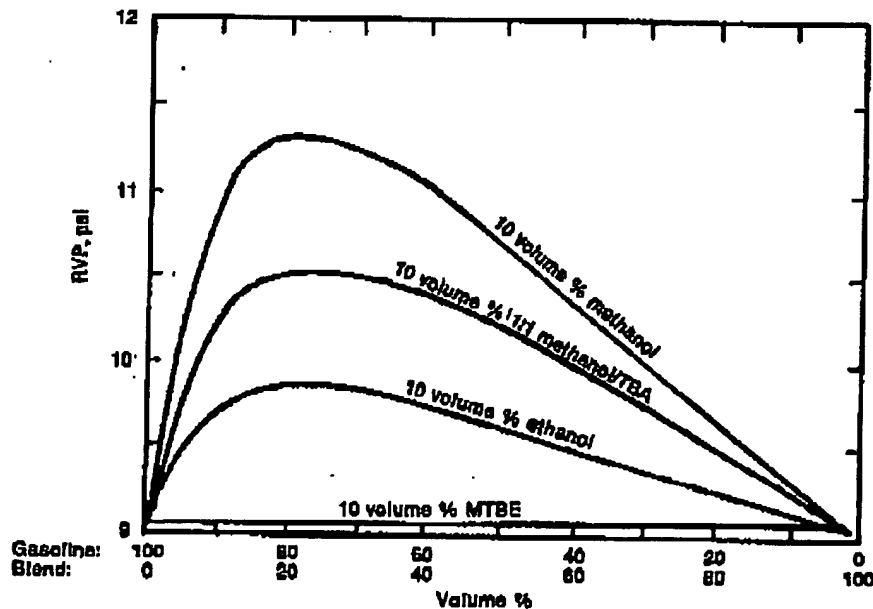
Source: References 31 and 33.

Figure 10—Effect of Base Gasoline RVP on RVP Boost Due to Alcohol Addition

Excessive vapor pressure may increase vehicle vapor lock and evaporative emissions as discussed in detail in Chapter 4. A gasoline volatility parameter, known as Vapor/Liquid (V/L) ratio, is a useful predictor of gasoline performance in a vehicle fuel system at high temperatures. The V/L ratio can be measured or it can be calculated for gasolines using a combination of distillation and vapor pressure characteristics.

Calculations of temperatures for specific V/L ratios of gasoline-alcohol blends using ASTM procedures developed for gasolines do not predict measured values. Figure 12 shows that the correlation of calculated versus measured temperatures for a V/L ratio of 20 ($T_{V/L=20}$) for gasoline and gasoline with MTBE is quite good.³⁶

Figure 13 shows how the addition of butane and alcohols changes the temperatures at which various V/L ratios occur. Higher temperatures for a given V/L ratio indicate better hot fuel handling properties. For example, the reference gasoline reaches a V/L ratio of 20 (the ratio that correlates best with vapor lock performance for most cars) at a temperature of 160°F. Adding 5 percent butane to the reference gasoline reduces the $T_{V/L=20}$ to 138°F, which is, coincidentally, the same



Source: Reference 35.

Figure 11—Effect of Commingling a Gasoline and a Gasoline-Oxygenate Blend of the Same RVP